disabling penetrations would be less than the penetrations described in this paragraph, the smaller penetration must be assumed.

TABLE 172.235—EXTENT OF DAMAGE

Collision Penetration	
Longitudinal extent	0.495 $L^{2/3}$ or 47.6 feet. (1/3 $L^{2/3}$ or 14.5 m), whichever is less.
Transverse extent	4 feet 2 inches (1.25 m).[1]
Vertical extent	From the baseline upward without limit.
Grounding Penetration Forward of a Point 0.3L Aft of the Forward Perpendicular	
Longitudinal	0.495 $L^{2/3}$ or 47.6 feet. (1/3 $L^{2/3}$ or 14.5 m), whichever is less.
Transverse	B/6 or 32.8 feet (10 m), whichever is less, but not less than 16.4 feet (5 m).[1]
Vertical extent	0.75 m from the baseline.
Grounding Penetration at Any Other Longitudinal Position	
Longitudinal extent	L/10 or 16.4 feet (5 m), whichever is less.
Transverse	4 feet 2 inches (1.25 m).
Vertical extent	2 feet 6 inches (0.75 m) from the baseline.

[1] Damage applied inboard from the vessel's side at right angles to the centerline at the level of the summer load line assigned under Subchapter E of this chapter.

§ 172.240 Permeability of spaces.

When doing the calculations required in § 172.225,

(a) The permeability of a floodable space, other than a machinery or cargo space, must be assumed as listed in Table 172.240;

(b) Calculations in which a machinery space is treated as a floodable space must be based on an assumed machinery space permeability of 85% unless the use of an assumed permeability of less than 85% is justified in detail; and

(c) Calculations in which a cargo space that is completely filled is considered flooded must be based on an assumed cargo space permeability of 60% unless the use of an assumed permeability of less than 60% is justified in detail. If the cargo space is not completely filled, a cargo space permeability of 95% must be assumed unless the use of an assumed permeability of less than 95% is justified in detail.

TABLE 172.240—PERMEABILITY

Spaces and tanks	Permeability (percent)
Storeroom spaces	60
Accommodations spaces	95
Voids	95
Consumable liquid tanks	[1] 95 or 0
Other liquid tanks	[2] 95 or 0
Cargo (completely filled)	60
Cargo (empty)	95
Machinery	85

[1] Whichever results in the more disabling condition.
[2] If tanks are partially filled, the permeability must be determined from the actual density and amount of liquid carried.

§ 172.245 Survival conditions.

A vessel is presumed to survive assumed damage if it meets the following conditions in the final stage of flooding:

(a) *Final waterline.* The final waterline, in the final condition of sinkage, heel, and trim must be below the lower edge of an opening through which progressive flooding may take place, such as an air pipe, or an opening that is closed by means of a weathertight door or hatch cover. This opening does not include an opening closed by a:

(1) Watertight manhole cover;

(2) Flush scuttle;

(3) Small watertight cargo tank hatch cover that maintains the high integrity of the deck;

(4) Class 1 door in a watertight bulkhead;

(5) Remotely operated sliding watertight door;

(6) Side scuttle of the nonopening type;

(7) Retractable inflatable seal; or

(8) Guillotine door.

(b) *Heel angle.* The maximum angle of heel must not exceed 15 degrees, except that this angle may be increased to 17 degrees if no deck edge immersion occurs.

(c) *Range of stability.* Through an angle of 20 degrees beyond its position of equilibrium after flooding, a vessel must meet the following conditions:

(1) The righting arm curve must be positive.

(2) The maximum righting arm must be at least 4 inches (10 cm).

(3) Each submerged opening must be weathertight

(d) *Metacentric height.* After flooding, the metacentric height must be at least 2 inches (50 mm) when the vessel is in the equilibrium position.